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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,675	03/29/2004	Hirokazu Yamagata	0756-7276	1165

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EXAMINER

HU, SHOUXIANG

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/810,675

Applicant(s)

YAMAGATA ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-24 and 31-52 is/are pending in the application.
- 4a) Of the above claim(s) 11,17,23,35 and 41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-16,18-22,24,31-34,36-40 and 42-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/073,285.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

According to previous office actions, claims 1-3, 5-24 and 31-52 are pending in this application; and claims 1-3, 5-10, 12-16, 18-22, 24, 31-34, 36-40 and 42-52 remain active in this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3, 5-10, 12-16, 18-22, 24, 31-34, 36-40 and 42-52 , as being supported by the elected species, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-3, 5 and 6 as amended each recite the subject matter of an anode having a leveling surface. However, such recited subject matter lacks full support from the original disclosure for the elected species. As shown in Figs. 3-6, only a portion of the anode surface is leveled, while the rest of it is formed at a different height.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-10, 12-16, 18-22, 24, 31-34, 36-40 and 42-52, as being in compliance with 35 U.S.C. 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (Applicant's admitted prior art) in view of JP'781 (JP 11-224781; 08/1999; of record).

AAPA discloses a light emitting display device (Fig. 2 in the instant disclosure), comprising: a thin film transistor (202) on an insulating surface; an interlayer insulating film (203) over the thin film transistor; an anode (205; ITO) having a substantial portion that has a leveling surface over the interlayer insulating film; a wiring (204) electrically connected to the thin film transistor and the anode; a bank (208) over the wiring and a portion of the anode; a light-emitting compound organic compound layer (206) over the anode and an upper surface of the bank; and a cathode (207) over the organic compound layer.

Although AAPA does not expressly disclose that the device can further include a first insulating film between the anode and the organic compound layer, JP'781 teaches to include such an insulating film in order to improve the uniformity of the light-emitting compound layer and to reduce leaking current therethrough (see the first insulating layer 109 in Fig.1), wherein the first insulating layer (109) can be as thin as less than 5

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nm and can be formed of a polymer through coating (see paragraphs 0010-0017 and 0022-0024), which thus can be naturally regarded as an organic resin film.

Therefore, it would have been obviously to one of ordinary skill in the art at the time the invention was made to incorporate the first insulating layer of JP'781 into the device of AAPA, so that a light-emitting device with reduced leaking current would be obtained. And, with the first insulating layer being laminated entirely with the light-emitting compound layer as incorporated in a structure such as that in Fig. 2 of AAPA, which would advantageously require no additional patterning mask(s) specifically for the first insulating layer, the first insulating layer in the collectively taught device would be naturally positioned over the leveling surface portion of the anode and also naturally over the upper surface of the bank therein, as the light-emitting compound layer would be.

Regarding claims 7-8, 13-14, 19-20, 31-32 and 37-38, it is noted that the average surface roughness (Ra) of the anode is an art-recognized resulted-oriented important parameter subject to routine experimentation and optimization; and that a low Ra such as in a range of 0.85 nm or less for the anode is always desirable in the art, for further reducing any potential current leakage.

Regarding claims 9, 15, 21, 33 and 39, it is noted that each of the cited insulating materials is commonly used in the art to form an interlayer insulating film.

Regarding claims 10, 16, 22, 34, 40 and 43-47, it is noted that it is art-known that the bank can be formed of a hardened resist/resin film that naturally includes the recited element(s) and is naturally insulating. In fact, the bank in AAPA is formed of a resin,

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which would have be to hardened (or hardened from a resist-like precursor) in order to remain to be sufficiently firm and stable; and it thus can be naturally regarded as a hardened resist/resin film that naturally includes the recited element(s). In addition, it is noted that any process limitations recited or implicated in these claims would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claims 48-52, it is noted that any process limitations recited or implicated in these claims about how the recited leveling surface can be formed would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Response to Arguments

Applicant's arguments filed on February 23, 2006 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, insofar as being in compliance with 35 U.S.C. 112, the claimed invention is taught in Fig. 2 of AAPA, except the recited first insulating film. JP'781 is cited to show that it is art known that such an insulating film in lamination with the light-

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emitting compound layer is desirable for improving the uniformity of the light-emitting compound layer and to reduce leaking current therethrough. Accordingly, it would be well with the ordinary skill in the art to replace the light-emitting compound layer of AAPA with the first-insulating-film/light-emitting-compound-layer lamination of JP'781 so as to desirably reduce leaking current therein. And, with such lamination being incorporated into the structure of AAPA, the first insulating layer in the collectively taught device would be naturally positioned over the leveling surface portion of the anode and also naturally over the upper surface of the bank therein, as the light-emitting compound layer would be, since the two would have been laminated together in the above replacement. Therefore, the combined teachings of AAPA and JP'7781 do teach the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH
June 21, 2006



SHOUXIANG HU
PRIMARY EXAMINER